CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 99-026
UPDATED WASTE DISCHARGE REQUIREMENTS
AND RESCISSION OF ORDER NO. 88-038 FOR:

CITY OF PALO ALTO
CLASS III SOLID WASTE DISPOSAL SITE
PALO ALTO, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

SITE OWNER AND LOCATION

1. The City of Palo Alto (hereinafter called the discharger) owns and operates a Class III municipal refuse disposal site in Palo Alto, Santa Clara County. The landfill site, as shown on figure 1, is located at the southwestern margin of the San Francisco Bay, at the northeastern extremity of Embarcadero Road, adjacent to the Mayfield Slough. Figure 1 is incorporated herein and made part of this order.

2. The discharger submitted a Joint Technical Document (JTD) on September 23, 1998, for the purpose of updating the site's Waste Discharge Requirements (WDR) for compliance with Title 27, California Code of Regulations (CCR). The JTD includes information required to update the site's Discharge Monitoring Program, establishes a schedule for technical report submissions related to eventual site closure and evaluates the existing leachate collection and removal system.

PURPOSE OF ORDER UPDATE

3. The primary objectives of this order are to: 1) Revise the groundwater, surface water and leachate monitoring programs to evaluate the impact to water quality; 2) Require evaluation of the current leachate extraction and monitoring system; 3) Bring the site into compliance with Title 27, California Code of Regulations (CCR) and Part 268 (Subtitle D), Title 40 of the Code of Federal Regulations (CFR).

SITE DESCRIPTION AND HISTORY

4. The landfill is located on a former salt marsh along the western edge of the San Francisco Bay and was operated as a refuse burn site during the early part of the century. In approximately 1954, refuse burning was discontinued and the site began operation as a landfill. The landfill is suspected to have been built by placement of waste upon the

ground surface, roughly at sea level. The only portion of the site known to have been excavated prior to landfilling is an area of approximately 3000 square feet in the northwestern corner of the site. Three sludge drying beds were located in this area, which were constructed by excavation of native soils to a depth of approximately ten feet. In the early 1960's the south end of Mayfield Slough was closed off and filled with refuse. Landfilling operations since 1978 have generally been over the older landfill deposits; this practice will continue until the site has reached capacity.

5. The landfill currently occupies approximately 137 acres. Maximum landfill elevation is anticipated to be approximately 60 feet above MSL, providing an approximate remaining lifetime of 12 years. Last date of refuse acceptance is anticipated to be April, 2011. The remaining lifetime approximations are based on a disposal rate of 160 tons of refuse and construction debris per day.

6. The Board adopted Order No. 88-038, for the Palo Alto Landfill, on March 16, 1988. This order rescinds Order No. 88-038.

WASTES AND THEIR CLASSIFICATION

7. The Palo Alto Landfill receives non-hazardous, municipal solid waste, which includes household wastes and construction debris. The landfill also receives green waste, which is diverted to a composting operation. The landfill's current permitted capacity is 10,127,000 cubic yards.

GEOLOGY

8. The landfill lies within the northern edge of the San Jose Plain, bounded by the Mayfield Slough on the east, Matadero Creek on the south, and a marsh area and former yacht harbor on the north. The landfill area was primarily low-lying flood plain until waste disposal commenced. Franciscan Formation bedrock underlies the alluvial materials beneath the site at depths exceeding 1,000 feet.

9. The landfill site is located adjacent to the San Francisco Bay on part of the extensive Santa Clara Valley alluvial basin which is composed of unconsolidated Quaternary Alluvium deposited by streams draining the surrounding mountain areas. These materials, ranging from Pleistocene to Holocene in age, are composed of clay, silt, sand, and gravel, laid down largely as part of a series of coalescing alluvial fans formed by streams. The succession of alluvial fan deposits interspersed by marine clay deposits near the San Francisco Bay. Silty and Sandy clays and Bay Mud predominate in the subsurface section, with randomly occurring sandy lenses and small channels.

10. The site is located in a seismically active area approximately midway between the San Andreas and the Hayward Fault systems. The site lies approximately 8 miles east of the San Andreas Fault, 11 miles Southwest of the Hayward Fault and 20 miles west of the Calaveras fault. A fault is suspected to underlie the site at a depth of 1,000 feet. The

discharger has indicated that there is no geologic evidence that this fault has offset sediments of Holocene age near the surface.

GROUNDWATER AND SURFACE WATER

11. **Groundwater** occurs within several feet of the ground surface in the vicinity of the landfill. The alluvial sediments contain groundwater at depths near the base of the landfill, approximately 20 feet below ground surface (BGS), and approximately 40 feet BGS.

12. Wells at the site monitor groundwater from a zone located approximately 40 to 60 feet below ground surface. Water Quality data from these wells indicate high chloride concentrations and in two of these wells, the presence of organic solvents 1,1,1-trichloroethene (TCA), 1,1-dichloroethane (DCA), and 1,1-dichloethene (DCE) in low concentrations but never confirmed during follow up sampling.

13. The Board adopted a revised Water Quality Plan for the San Francisco Bay Basin (Basin Plan) in June 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20 and November 13, respectively, of 1995. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

14. The shallow groundwater (elevation MSL to approximately 40 feet BGS) found in the surficial alluvial deposits beneath and adjacent to the landfill recharges the surface waters and possibly the deeper groundwater aquifers. The beneficial uses of South San Francisco Bay and contiguous waters are as follows:

    a. Wildlife habitat
    b. Water contact recreation
    c. Non-contact recreation
    d. Commercial and Sport Fishing
    e. Preservation of rare and endangered species
    f. Estuarine habitat
    g. Fish Migration and spawning

    The present and potential beneficial uses of the deeper groundwater (elevation 150 feet below ground surface) are as follows:

    a. Domestic and municipal water supply
    b. Industrial process waste supply
    c. Industrial service supply
    d. Agricultural supply

15. Groundwater wells within a mile of the site include the following: a multiple-completed observation well installed by the Santa Clara Valley Water district (SCVWD) for potentiometric monitoring of the shallow and deep aquifer zones; the "Duck Club Well", an abandoned deep aquifer water supply well drilled in 1934 adjacent to the former city yacht Harbor; a former monitoring well, I-6, of an abandoned SCVWD recharge project located just south of the landfill; and approximately 23 shallow domestic wells located approximately one mile south of the landfill. Total annual pumpage from the domestic wells is currently less than 4 acre-feet. This water is of drinking water quality and is used mostly for irrigation.

16. Title 27, CCR, requires that the discharger maintain a groundwater monitoring program designed to detect the presence of waste constituents in surface water and groundwater outside of the waste management unit (WMU) and in any unsaturated zone beneath and adjacent to the WMU.

17. Section 13273 of the California Water Code requires that the State Water Resources Control Board Rank all solid waste disposal sites in California, and that a solid waste water quality assessment test (SWAT) be conducted for each site on or before the designated submittal date for each rank. The Palo Alto Landfill was ranked first on the list and a SWAT was submitted on 6/30/87. The SWAT report was determined to be complete, by Board Staff, on 12/20/89. The SWAT report concluded, based on all available geologic, hydrologic and water quality data, that there is no detectable leakage from the landfill to shallow groundwater or surface water.

18. **Surface water** runoff from the site discharges into the bay through the abandoned Yacht Club Harbor and Mayfield Slough.

MONITORING PROGRAMS

19. **Groundwater Monitoring**- Currently, the 20 foot aquifer is monitored at the site by six groundwater wells. The lower 40 foot aquifer is monitored by seven groundwater wells. The 20 foot monitoring well network consists of one upgradient well (G-13/88) screened in sand, and five downgradient wells screened in the same sand zone (G-9/88, G-14/88, G-16/88, G-17/88 and G-19). The 40 foot monitoring network consists of three upgradient wells (G-3A, G-10/88, and G-12/88) and four downgradient wells (G-1A, G-8/88, G-15/88, and G-20). From 1993 to present, the monitoring wells were monitored quarterly for general monitoring parameters that include volatile organic compounds (VOCs), total nitrogen, pH, and Total Organic Carbon. A more extensive list of compounds, the constituents of concern (COC), is analyzed for once every five years; the next COC monitoring event is scheduled for the year 1999. The updated groundwater-monitoring program is detailed in the attached Discharge Monitoring Program in Attachment A.

20. **Leachate Monitoring** – Leachate is currently monitored at five locations using leachate piezometers. Changes to the leachate-monitoring program are detailed in the Discharge Monitoring Program attached to this Order (Attachment A)

21. **Surface Water Monitoring** – Surface water is currently monitored at five locations under a NPDES general industrial storm water permit issued by this Board. The surface water monitoring program is detailed in the discharge Monitoring Program attached to this Order (Attachment A).

22. **Vadose Zone Monitoring** – Vadose zone monitoring, as required by section 20415 of Title 27, CCR, is not technically feasible at this site. Groundwater is currently in contact with the bottom of waste.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

23. This action is exempted from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15301, Title 14, CCR.

24. The Board has notified the discharger and interested agencies and persons of its intent to issue Waste Discharge Requirements for the discharger and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

25. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the City of Palo Alto, their agents, successors and assigns shall meet the applicable provisions contained in Title 27, Division 2, Subdivision 1 of the California Code of Regulations and Division 7 of the California Water Code and shall comply with the following:

A. PROHIBITIONS

1. The disposal of wastes shall not create a pollution or nuisance as defined in Section 13050 (l) and (m) of the California Water Code (CWC).

2. Wastes **shall not** be placed in or allowed to contact ponded water.

3. Wastes **shall not** be disposed of in any position where they can be carried from the disposal site and discharged into the waters of the State or the United States.

4. Leachate from waste and ponded water containing leachate or in contact with solid wastes **shall not** be discharged to the waters of the State or the United States.

5. Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the CWC. (H&SC Section 5411, CWC Section 13263)

6. Hazardous and Designated wastes as defined in Section 2521 (Chapter 15) and Section 20210 (Title 27), except for waste that is hazardous due only to its friable asbestos content, **shall not** be deposited, disposed of, or stored at this site.

7. High Moisture content wastes (including restaurant grease) containing less than 50% solids, **shall not** be deposited, disposed of, or stored at this site.

8. The discharge of waste that has the potential to reduce or impair the integrity of the containment structures or which, if co-mingled with other wastes in the unit, could produce chemical reactions that create heat or pressure, fire, explosion, toxic by-products, or reactions products which in turn:

   - Require a higher level of containment than provided by the waste management unit;
   - Are "Restricted Hazardous Wastes"; or
   - Impair the integrity of the containment structures is expressly prohibited.

9. The discharger, or any future site owner or operator of the site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:

   a. Surface Waters

      1. Floating, suspended, or deposited macroscopic particulate mater or foam;
      2. Bottom deposits or aquatic growths;
      3. Alteration of temperature, turbidity, or apparent color beyond natural background levels;
      4. Visible, floating, suspended or deposited oil or other products of petroleum origin; and
      5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause harmful effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

   b. Groundwater

      1. Groundwater shall not be impacted as a result of solid waste degradation.

B. SPECIFICATIONS

1. All reports pursuant to this order shall be prepared under the supervision of a registered civil engineer or certified engineering geologist.

2. The site shall be protected from any washout or erosion of wastes or covering material and from inundation which could occur as a result of a 100-year, 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years.

3. Water used during disposal operations shall be limited to dust control, fire suppression and soil moisture conditioning.

4. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes during the life of the site. The discharge of surface water shall be subject to an general industrial storm water permit issued separately by this Board. Surface drainage ditches shall be constructed to ensure that all rainwater is diverted away from the disposal area and into the adjacent receiving waters.

5. Hazardous wastes, designated wastes, and infectious wastes shall not be disposed of at this landfill. Non-hazardous, inert wastes and asbestos may be disposed of at this landfill provided that all regulations and provisions of the California Integrated Waste Management Board, California Department of Toxic Substance Control, local health agencies and County Land Use Permit requirements are complied with.

6. The discharger shall design, install and operate a leachate collection and removal system for the landfill, such that no more than 1 foot of hydraulic head remains on any portion of the bottom of fill. The leachate collection and recovery system shall be designed and operated to function without clogging, (Sect. 20340 [Title 27]), and inspected quarterly.

7. Recirculation of leachate and/or landfill gas condensate back to the unlined waste management unit is forbidden.

8. The existing facility containment, drainage, and monitoring systems shall be maintained as long as leachate is present and poses a threat to water quality.

9. The discharger shall assure that the foundation of the site, the solid waste fill, and the structures which control leachate, surface drainage, erosion and gas are constructed and maintained to withstand conditions generated during the maximum probable earthquake.

10. The final cover system shall be graded and maintained to promote lateral runoff and prevent ponding and infiltration of water. As portions of the landfill are closed, the exterior surfaces shall be graded to promote lateral runoff of precipitation. The final cover for the landfill will have a minimum slope of three percent plus an allowance for subsidence. The final cover system shall meet all other applicable requirements as described in Title 27.

11. The discharger shall analyze the samples from the existing groundwater wells as outlined in the Discharge Monitoring Program (Attachment A).

12. The discharger shall operate the waste management facility so as to prevent a statistically significant difference from existing in the concentrations of indicator parameters or waste constituents in waters passing through the point of compliance, as defined in Section 20390, Title 27. The discharger shall operate the waste management facility so as to not exceed the "Water Quality Protection Standard" (WQPS), of the Discharge Monitoring Program.

13. In the event of a release of a constituent of concern beyond the Point of Compliance (Section 20405, Title 27), the site begins a Compliance Period (Section 20410, Title 27). During the Compliance Period, the discharger shall perform an Evaluation Monitoring Program and a Corrective Action Program. The Point of Compliance is defined as the vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

14. Interim cover shall be maintained over all waste, at all times, except for the active face area of the disposal operations, or as provided for by the performance standards adopted by the California Integrated Waste Management Board.

15. The discharger shall install any reasonable additional groundwater and leachate-monitoring devices required to fulfill the terms of any future Discharge Monitoring Program issued by the Executive Officer. In addition, the discharger shall maintain all devices or designed features, installed in accordance with this Order such that they continue to operate as intended without interruption.

16. Methane and other landfill gases shall be adequately vented, removed from the landfill, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water because of migration through the vadose zone.

17. The discharger shall maintain all devices or designed features installed in accordance with this order, such that they continue to operate as intended without interruption as provided for by the performance standards adopted by the California Integrated Waste Management Board.

18. The discharger shall provide a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance period. These monuments shall be installed by a land surveyor or civil engineer registered by the State of California.

19. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations during the active life and postclosure maintenance period.

20. The Regional Board shall be notified immediately of any failure occurring in the waste management unit. Any failure, which threatens the integrity of containment features, or the landfill, shall be promptly corrected after approval of the method and schedule by the Executive Officer.

21. The discharger shall notify the Regional Board at least 180 days prior to beginning any intermediate or final closure activities. This notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable regulations.

22. The discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report which documents that the area has been closed according to the requirements of this Order and Title 27. The discharger shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with all applicable regulations.

23. The discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.

24. The discharger shall continue to operate and maintain the leachate collection and removal system. The leachate collection and removal system in the phase IIC fill are shall be expanded to accommodate additional waste deposition in this area.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications and Provisions of this Order. All required submittals must be acceptable to the Executive Officer.

2. All technical and monitoring reports submitted pursuant to this Order are being requested pursuant to Section 13267 of the California Water Code. Failure to submit reports in accordance with schedules established by this Order, attachments to this Order, or failure to submit a report of sufficient technical quality to be

acceptable to the Executive Officer may subject the discharger to enforcement action pursuant to Section 13268 of the California Water Code.

3. The discharger must comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13267, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350).

4. The discharger shall submit annual monitoring reports by January 31 of each year in accordance with the attached Updated Discharge Monitoring Program (Attachment A). Sample collection shall be conducted at locations and frequencies specified in the Updated Discharge Monitoring Plan. The annual report to the Board **shall** cover the entire previous calendar year as described in Part A of the Updated Discharge Monitoring Program and Title 27 CCR, Section 20380 through Section 20435. In addition to the requirements outlined in Attachment A, this report shall also include the following: location and operational condition of all leachate and groundwater monitoring wells; groundwater and leachate contours for each monitoring event; tabulation of monthly leachate volumes discharged to the wastewater district along with tabulated analytical results for these discharges; the existing gas extraction system (annual report only); and gas monitoring results (annual report only).

REPORT DUE DATE:	**ANNUAL REPORT - JANUARY 31 (OF EACH YEAR)**

5. The discharger shall submit a **Final Cover Construction Plan** which shall include, but is not limited to, the following: a schedule for completion of all construction field activities; CQA testing frequencies for in-place soils and any borrow materials; final cover design drawings; details of landfill gas and leachate well contingencies during cover construction; proposed final gas and leachate well configuration with system changes.

PLAN DUE DATE:	**180 days prior to anticipated receipt of last waste**

6. The discharger shall submit a detailed **Updated Post Earthquake Inspection and Corrective Action Plan**, acceptable to the Executive Officer, to be implemented in the event of any earthquake generating ground shaking of Magnitude 6 or greater at or within 30 miles of the landfill. The report shall describe the containment features, and groundwater monitoring and leachate control facilities potentially impacted by the static and seismic deformations of the landfill. The plan shall provide for reporting results of the post earthquake inspection to the Board

within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to the landfill structures, the corrective action plan shall be implemented and this Board shall be notified of any damage.

REPORT DUE DATE: APRIL 3, 2000

7. The discharger shall submit a **Leachate Monitoring System Evaluation**. This plan shall include discussion and evaluation of leachate monitoring wells, collection sumps, effectiveness of the leachate removal system, and leachate contour levels (in the form of contour maps) as measured during the semi-annual monitoring events. Additionally, submit an evaluation of the overall effectiveness of the leachate removal system in reducing leachate volumes within the landfill. Following the initial submittal, this discussion and evaluation will be performed on a yearly basis and included with the annual monitoring report.

REPORT DUE DATE: JANUARY 31, 2000
JANUARY 31 each year thereafter

8. The discharger shall install a sufficient number of monitoring wells to adequately characterize leachate levels in the landfill, as required in Provision C.7. Active leachate extraction wells shall not be used to determine leachate buildup.

9. The discharger shall submit a report, acceptable to the Executive Officer, detailing leachate extraction plans in the Phase IIC fill area. Said report shall include plans and specifications and a schedule for installation.

REPORT DUE DATE: 180 Days before filling of Phase IIC begins

10. The discharger shall submit a report, acceptable to the Executive Officer, detailing the repair and maintenance activities that need to be completed prior to the commencement of the upcoming rainy season. This report shall also include a schedule for repair and maintenance activities, and cost analysis detailing the anticipated expense for all repairs, maintenance, and monitoring during the next 12 months. Repair and maintenance estimates shall be based on rainy season inspections conducted throughout the winter as required in the Discharge Monitoring Plan (Attachment A).

REPORT DUE DATE: JUNE 1 each year

11. The discharger shall submit an updated **Leachate Spill Contingency Plan** to be instituted in the event of a surface leak or spill from the leachate facilities. The

discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board and the Local Enforcement Agency (LEA). The discharger shall initiate its contingency action plan to stop and contain the migration of pollutants to receiving waters.

REPORT DUE DATE: APRIL 3, 2000

12. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

REPORT DUE DATE: IMMEDIATE

13. The discharger shall file with the Regional Board Discharge Monitoring Reports performed according to any Discharge Monitoring Program issued by the Executive Officer.

14. All reports pursuant to these Provisions shall be prepared under the supervision of a civil engineer or certified engineering geologist.

15. The discharger shall maintain a copy of these waste discharge requirements and these requirements shall be available to operating personnel at the facility at all times (CWC Section 13263).

16. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems, which arise in the future, as a result of the waste discharged or related operations.

17. In the event that the discharger-owned property adjacent to the landfill is developed into residential dwellings, the discharger will notify perspective home purchasers of the presence of the landfill.

18. The discharger shall permit the Regional Board or its authorized representative, upon presentation of credentials:

- Immediate entry upon the premises on which wastes are located or in which any required records are kept.
- Access to copy any records required to be kept under the terms and conditions of this order.
- Inspection of any treatment equipment, monitoring equipment, or monitoring methods required by this order or by any other California State Agency.
- Sampling of any discharge or groundwater governed by this order.

19. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes.

20. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger. The discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. The discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgment that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on (CWC Sections 13267 and 13263). The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contact with the Board and statement. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

21. This Order is subject to Board review and updating, as necessary, to comply with changing State and Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics (CWC Section 13263).

22. Where the discharger becomes aware that it failed to submit any relevant facts in a Joint Technical Document or submitted incorrect information in a Joint Technical Document or in any report to the Regional Board, it shall promptly submit such facts or information (CWC Sections 13260 and 13267).

23. This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from his liability under Federal, State or local laws, nor do they create a vested right for the discharger to continue the waste discharge [CWC Section 13263(g)].

24. Provisions of these waste discharge requirements are severable. If any provision of these requirements are found invalid, the remainder of these requirements shall not be affected.

25. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order.

Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this order [CWC Section 13263(f)].

26. Reporting of Hazardous Substance Release: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8:00 to 5:00). A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified. This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

27. The discharger shall report any noncompliance which may endanger human health or the environment. Any such information shall be provided orally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours [CWC Sections 13263 and 13267].

28. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Officer a written statement signed by a registered professional engineer certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

29. Unless otherwise permitted by the Regional Board Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest

laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR, Part 1360) promulgated by the U.S. Environmental Protection Agency (CCR Title 23, Section 2230).

30. This Board's Order No.88-038 is hereby rescinded.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 25, 1999.

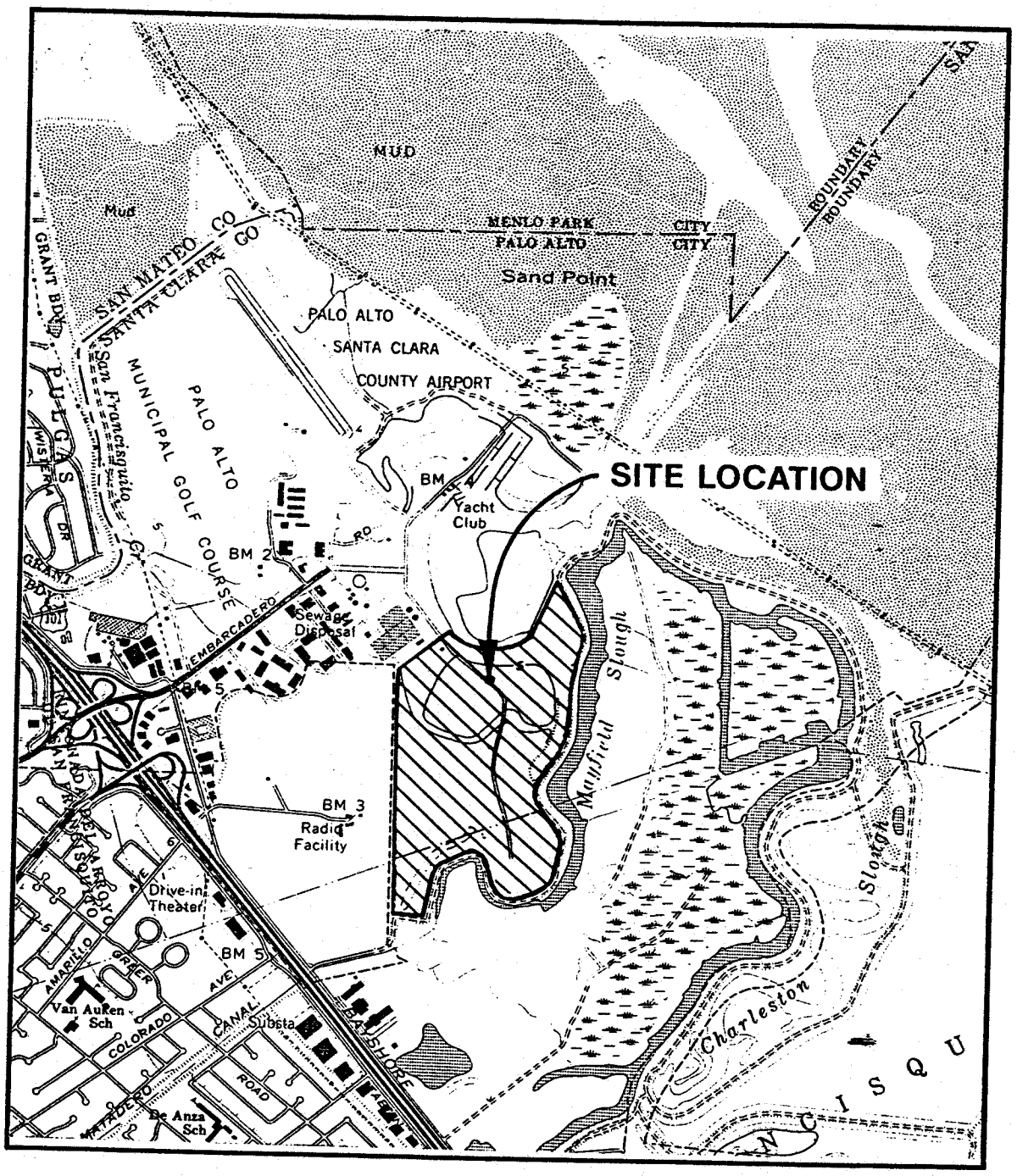
Loretta K. Barsamian
Executive Officer

Figures: Figure 1 - Site Location Map
Figure 2 - Facility Map

Attachment: Attachment A - Discharge Monitoring Program

REFERENCES

City of Palo Alto "Joint Technical Document, Palo Alto Landfill, Palo Alto, California." September 1998.



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NOTES

DATE	10/98
JOB NO.	G193-01
DWG NO.	PA01016
DRAWN	B BURFIELD
CHK'D	B BURFIELD
APP'D	D AFFELDT

The PRA Group, Inc
CONSULTING ENGINEERS

PROJECT SITE LOCATION MAP

PALO ALTO SANITARY LANDFILL
CITY OF PALO ALTO

FIGURE NO. 1

REV NO.

DRAWN BY: W/C

CHEC'D BY:

DATE:

SCALE: 1" = 500'

City of Palo Alto

CITY OF PALO ALTO LANDFILL

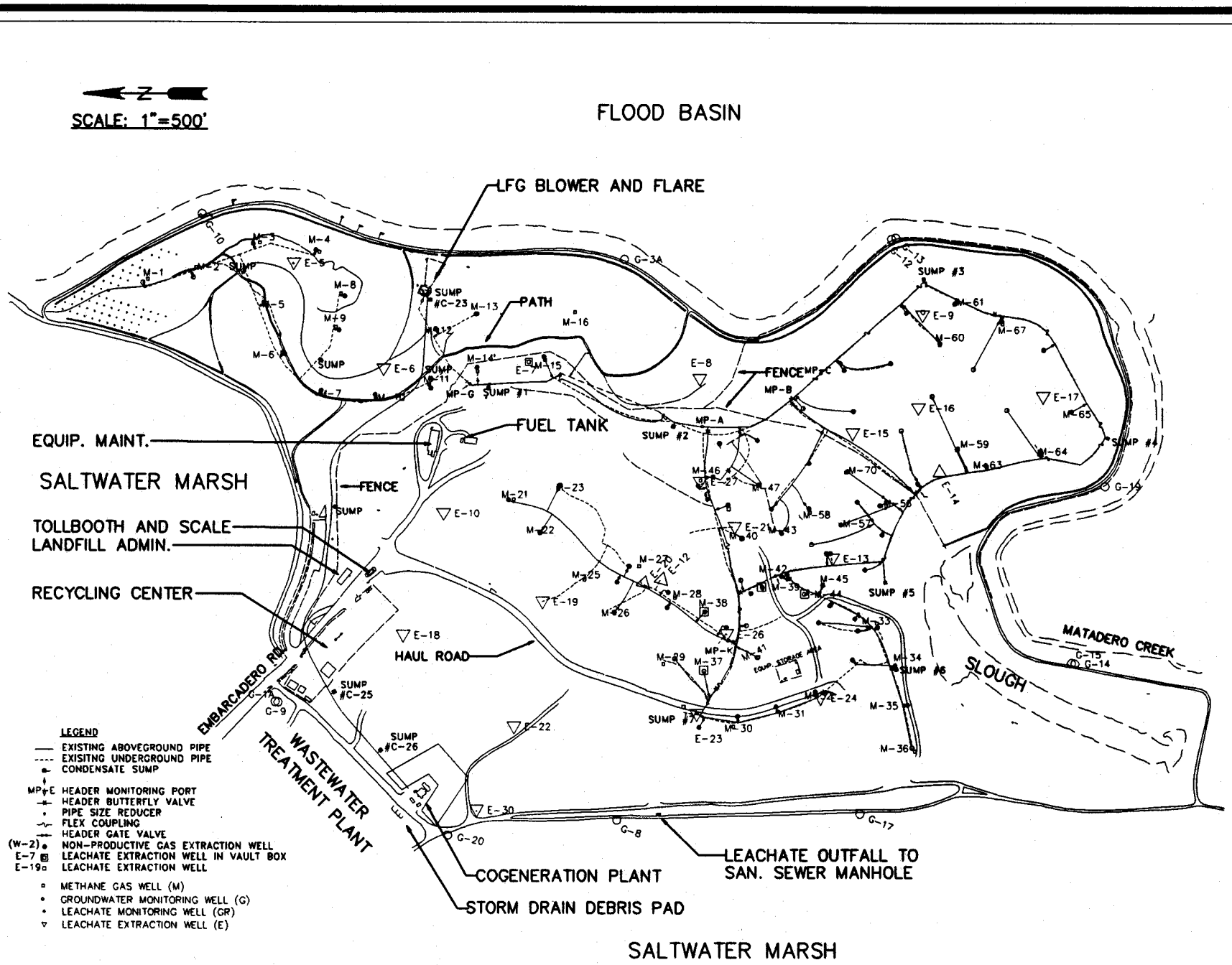
STRUCTURES AND FACILITIES

APPROVED BY:

PE NO.

DATE:

FIG. 2



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

DISCHARGE MONITORING PROGRAM

FOR

CITY OF PALO ALTO
PALO ALTO LANDFILL

SAN MATEO COUNTY

ORDER NO. 99-026

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Discharge Monitoring Program is issued in accordance with Provision C.3 Regional Board Order No. 99-026.

The principal purposes of a discharge monitoring program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, (4) to assist the discharger in complying with the requirements of Title 27.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.

2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwaters, which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas and the surface runoff from the site are considered receiving waters.

3. Standard observations refer to:

a. Receiving Waters

1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
2) Discoloration and turbidity: description of color, source, and size of affected area.
3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.

4) Evidence of beneficial use: presence of water associated wildlife.
5) Flow rate.
6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

b. Perimeter of the waste management unit.

1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3) Evidence of erosion and/or daylighted refuse.

c. The waste management unit.

1) Evidence of ponded water at any point on the waste management facility.
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3) Evidence of erosion and/or daylighted refuse.
4) Standard Analysis (SA) and measurements are listed on Table A (attached)

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Section 20415 and
2. Surface water per Section 20415,

and per the general requirements specified in Section 20415 of Title 27.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.

2. Date and time of sampling.

3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.

5. Calculation of results.

6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written detection monitoring reports shall be filed by the 30th day of the month following the report period. In addition an annual report shall be filed as indicated in F.3 below.

The reports shall be comprised of the following:

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. Each monitoring report shall include a compliance evaluation summary. The summary shall contain:

1) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.

2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.

3) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.

c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.

d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification

shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.

2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

e. An evaluation of the effectiveness of the leachate monitoring or control facilities, which includes an evaluation of leachate buildup within the disposal units, a piezometric surface map, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.

g. The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations.

2. CONTINGENCY REPORTING

a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:

1) a map showing the location(s) of discharge;
2) approximate flow rate;
3) nature of effects; i.e. all pertinent observations and analyses; and
4) corrective measures underway or proposed.

b. A report shall be made in writing to the Board within seven days of determining that a statistically significant difference occurred between a down gradient sample and a WQPS. Notification shall indicate what WQPS(s) has/have been exceeded. The discharger shall immediately resample at the compliance point where this difference has been found and re-analyze.

c. If re-sampling and analysis confirms the earlier finding of a statistically significant difference between monitoring results and WQPS(s) the discharger must submit to the Board an amended Report of Waste Discharge as specified in Section 20420 for

establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Section 20425 of Title 27.

d. Within 180 days of determining statistically significant evidence of a release, submit to the regional board an engineering feasibility study for a Corrective Action Program (CAP) necessary to meet the requirements of Section 20430. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

3. REPORTING

By January 31 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a $3^1/2$" computer data disk, MS-EXCEL format, tabulating the year's data.

b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.

c. A map showing the area, if any, in which filling has been completed during the previous calendar year.

d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.

e. An evaluation of the effectiveness of the leachate monitoring/ control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

4. WELL LOGS

A boring log and a monitoring well construction log shall be submitted for each sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. WASTE MONITORING – **Observe Semi-Annually, Report Semi-Annually**

1. Record the total volume and weight of refuse in cubic yards and tons disposed of at the site during each month showing locations and dimensions on a sketch or map.
2. Record a description of waste stream to include percentage of waste type, ie., Residential, Commercial, Industrial or Construction debris.
3. Record location and aerial extent of disposal of each waste type.

B. ON-SITE OBSERVATIONS - **Observe Semi-Annually, Report Semi-Annually**

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
V-1 Through V-`n'	Located on the waste disposal area as deli-neated by a 500 foot grid network.	Standard observations for the waste management unit.	Weekly
P-1 through P-`n' (per-imeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the perimeter.	Weekly

C. STORMWATER, GROUNDWATER, AND LEACHATE MONITORING
Report Semi-Annually

i. **Storm Water:** Storm water monitoring shall be conducted as outlined in Table A-1. Results from storm water monitoring and discharge of surface water runoff from retention basins shall be submitted as part of the annual report.

Table A-1
Storm Water Monitoring Parameters
Palo Alto Landfill

PARAMETERS	METHOD[1]	FREQUENCY[2]
TSS	160.2	S
pH	Field	S
Electrical conductivity	Field	S
Iron	6010	S
Turbidity	Field	S
Oil and Grease	418.1	S

[1] Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Methods for Measuring Acute Toxicity of Effluent to Freshwater and Marine Organisms, USEPA 600/4-85/0133, April, 1985, 3rd edition.
[2] S = Samples to be collected during two storm events between October and April.

ii. **Groundwater:** Groundwater samples shall be analyzed as detailed in Tables A-3 and A-4. Sample locations are shown in Figure A-1. The Discharger shall analyze for all Subtitle D, Appendix II compounds once every five years with the next sampling event scheduled for 1999.

Table A-3
Routine Monitoring Parameters for Groundwater
Palo Alto Landfill

PARAMETERS	METHOD[1]	FREQUENCY[2] Points[3]
Arsenic	7060	S
Ammonia as nitrogen	350.3	S
Un-ionized Ammonia	Calculated	S
Total dissolved solids	160.1	S
pH	field	S
Electrical conductivity	field	S
Turbidity	field	S
Temperature	field	S
Color	field	S

Chromium	7191	S
VOCs (including MTBE)		
standard USEPA method 8260 list[3]	8260	S

1 Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, USEPA SW-846, 3rd edition, November 1986 and revisions.
2 S = Samples to be collected semiannually
3 Includes the 47 VOCs in Subtitle D Appendix I and shall include MTBE.
4 Groundwater wells G-10/88, G-3A, G-12/88, G-13/88, G-1A, G-8/88, G-9/88, G-14/88, G-15/88, G-16/88, G-17/88, G-19 and G-20.

Table A-4
Groundwater Constituents of Concern
Palo Alto Landfill

PARAMETER	METHOD[1]	FREQUENCY[2]
Cyanide	335.2	5Y
Sulfide	376.1	5Y
Total Metals		
Antimony	6010	5Y
Arsenic	7060	5Y
Barium	6010	5Y
Beryllium	6010	5Y
Cadmium	6010	5Y
Chromium	7191	5Y
Cobalt	6010	5Y
Copper	6010	5Y
Lead	7421	5Y
Mercury	7470	5Y
Nickel	6010	5Y
Selenium	7740	5Y
Silver	6010	5Y
Thallium	7841	5Y
Tin	6010	5Y
Vanadium	6010	5Y
Zinc	6010	5Y
Volatile Organic Compounds		
VOCs from Appendix II of 40 CFR Part 258, analyzed by USEPA method 8260 and shall include MTBE.	8260	5Y
Semivolatile Organic Compounds		
standard USEPA method 8270 list	8270	5Y
Organochlorine Pesticides and PCBs		
standard USEPA method 8080 list	8080	5Y
Chlorophenoxy Herbicides		
standard USEPA method 8150 list	8150	5Y

[1] Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, USEPA SW-846, 3rd edition, November 1986 and revisions.
[2] Samples to be collected once every 5 years unless triggered by the release discovery response.

iii. **Leachate:** Leachate samples shall be analyzed as detailed in Table A-5. Sample locations are shown in Figure A-1. The Discharger shall analyze for all Subtitle D, Appendix II compounds once every five years with the next sampling event scheduled for 1999.

Table A-5
Leachate Monitoring Parameters
Palo Alto Landfill

PARAMETER	METHOD[1]	FREQUENCY[1]
Arsenic	206.2	5Y
Cadmium	200.7	5Y
Chromium	200.7	5Y
Copper	200.7	5Y
Lead	239.2	5Y
Mercury	245.1	5Y
Nickel	200.7	5Y
Silver	200.7	5Y
Zinc	200.7	5Y
Phenols	420.1	5Y
Cyanide	335.2	5Y
Polycyclic Aromatic Hydrocarbons	8100	5Y
Methylene Chloride	8260	5Y
Chloroform	8260	5Y
Perchloroethylene	8260	5Y
Benzene	8260	5Y
MTBE	8260	5Y
Carbon Tetrachloride	8260	5Y
Carbon Disulfide	8260	5Y
Tot. Petro Hydrocarbon Gasoline	DHS LUFT	5Y
Oil and Grease	418.1	5Y
pH	Field	5Y
Temperature	Field	5Y
Biochemical Oxygen Demand	405.1	5Y
Total Suspended Solids	160.2	5Y

[1]Sample analyzed every five years

E. FACILITIES MONITORING

The Discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report semi-annually. The facilities to be monitored shall include, but not be limited to:

a. Leachate Collection and Removal System
b. Surface water drainage channels
c. Perimeter diversion channels

F. REPORT DUE DATES

Reports shall be due on the following schedule:

First semi-annual report:	**July 31**
Second semi-annual report:	**January 31**
Annual Report:	**Combined with the Second Semi-Annual due January 31**

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 99-026.

2. Is effective on the date shown below.

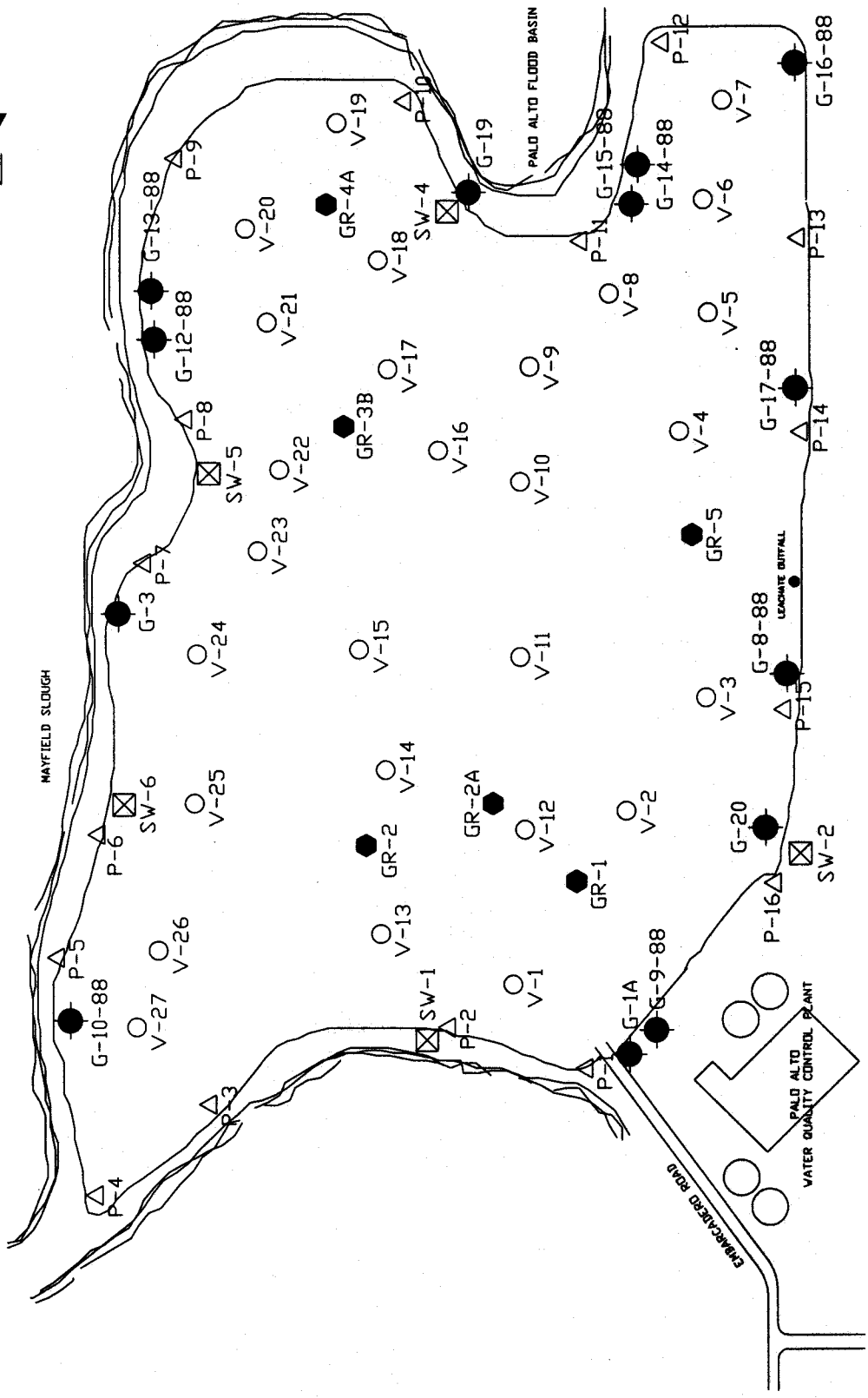
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

Loretta K. Barsamian
Executive Officer

Date Ordered:

Attachment: Figure A-1 – Sampling Location Map

FIGURE 1A



LEGEND:

G - GROUNDWATER MONITORING WELL
GR - LEACHATE PIEZOMETER
V - ON-SITE OBSERVATION STATION
- STORM WATER MONITORING LOCATION
P - PERIMETER OBSERVATION STATION

DRAWN BY: JA DATE: 8/96 CHEC'D BY: DATE:	LANDFILL MONITORING LOCATIONS	APPROVED BY: PE NO. DATE:
SCALE: NONE	City of Palo Alto	DRAWING NO.

LANDMONT